

limits when subjected to the effects of the vibratory motion of the Operating Basis Earthquake in combination with normal operating loads. The engineering method used to insure that these structures, systems, and components are capable of withstanding the effects of the Operating Basis Earthquake shall involve the use of either a suitable dynamic analysis or a suitable qualification test to demonstrate that the structures, systems and components can withstand the seismic and other concurrent loads, except where it can be demonstrated that the use of an equivalent static load method provides adequate conservatism. The analysis or test shall take into account soil-structure interaction effects and the expected duration of vibratory motion.

(3) *Required Seismic instrumentation.* Suitable instrumentation shall be provided so that the seismic response of nuclear power plant features important to safety can be determined promptly to permit comparison of such response with that used as the design basis. Such a comparison is needed to decide whether the plant can continue to be operated safely and to permit such timely action as may be appropriate.

These criteria do not address the need for instrumentation that would automatically shut down a nuclear power plant when an earthquake occurs which exceeds a predetermined intensity. The need for such instrumentation is under consideration.

(b) *Surface Faulting.* (1) If the nuclear power plant is to be located within the zone requiring detailed faulting investigation, a detailed investigation of the regional and local geologic and seismic characteristics of the site shall be carried out to determine the need to take into account surface faulting in the design of the nuclear power plant. Where it is determined that surface faulting need not be taken into account, sufficient data to clearly justify the determination shall be presented in the license application.

(2) Where it is determined that surface faulting must be taken into account, the applicant shall, in establishing the design basis for surface faulting on a site take into account evidence concerning the regional and local geologic and seismic characteristics of the site and from any other relevant data.

(3) The design basis for surface faulting shall be taken into account in the design of the nuclear power plant by providing reasonable assurance that in the event of such displacement during faulting certain structures, systems, and components will remain functional. These structures, systems, and components are those necessary to assure (i) the integrity of the reactor coolant pressure boundary, (ii) the capability to shut down the reactor and maintain it in a safe shutdown condition, or (iii) the capability to prevent or mitigate the consequences of accidents which could result in potential offsite

exposures comparable to the guideline exposures of this part. In addition to seismic loads, including aftershocks, applicable concurrent functional and accident-induced loads shall be taken into account in the design of such safety features. The design provisions shall be based on an assumption that the design basis for surface faulting can occur in any direction and azimuth and under any part of the nuclear power plant unless evidence indicates this assumption is not appropriate, and shall take into account the estimated rate at which the surface faulting may occur.

(c) *Seismically Induced Floods and Water Waves and Other Design Conditions.* The design basis for seismically induced floods and water waves from either locally or distantly generated seismic activity and other design conditions determined pursuant to paragraphs (c) and (d) of section V, shall be taken into account in the design of the nuclear power plant so as to prevent undue risk to the health and safety of the public.

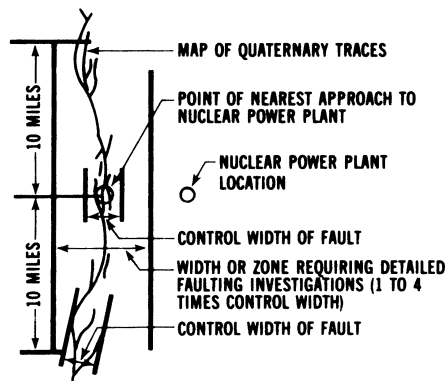


FIGURE 1—DIAGRAMMATIC ILLUSTRATION OF DELINEATION OF WIDTH OF ZONE REQUIRING DETAILED FAULTING INVESTIGATIONS FOR SPECIFIC NUCLEAR POWER PLANT LOCATION.

(Sec. 201, Pub. L. 93-438, 88 Stat. 1243 (42 U.S.C. 5841))

[38 FR 31281, Nov. 13, 1973, as amended at 38 FR 32575, Nov. 27, 1973; 42 FR 2052, Jan. 10, 1977]

## PART 110—EXPORT AND IMPORT OF NUCLEAR EQUIPMENT AND MATERIAL

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AUTHORITY: Secs. 51, 53, 54, 57, 63, 64, 65, 81, 82, 103, 104, 109, 111, 126, 127, 128, 129, 161, 181, 182, 183, 187, 189, 68 Stat. 929, 930, 931, 932, 933, 936, 937, 948, 953, 954, 955, 956, as amended (42 U.S.C. 2071, 2073, 2074, 2077, 2092–2095, 2111, 2112, 2133, 2134, 2139, 2139a, 2141, 2154–2158, 2201, 2231–2233, 2237, 2239); sec. 201, 88 Stat. 1242, as amended (42 U.S.C. 5841); sec. 5, Pub. L. 101–575, 104 Stat. 2835 (42 U.S.C. 2243); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note).

Sections 110.1(b)(2) and 110.1(b)(3) also issued under Pub. L. 96–92, 93 Stat. 710 (22 U.S.C. 2403). Section 110.11 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152) and secs. 54c and 57d, 88 Stat. 473, 475 (42 U.S.C. 2074). Section 110.27 also issued under sec. 309(a), Pub. L. 99–440. Section 110.50(b)(3) also issued under sec. 123, 92 Stat. 142 (42 U.S.C. 2153). Section 110.51 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Section 110.52 also issued under sec. 186, 68 Stat. 955 (42 U.S.C. 2236). Sections 110.80–110.113 also issued under 5 U.S.C. 552, 554. Sections 110.130–110.135 also issued under 5 U.S.C. 553. Sections 110.2 and 110.42(a)(9) also issued under sec. 903, Pub. L. 102–496 (42 U.S.C. 2151 *et seq.*).

SOURCE: 43 FR 21641, May 19, 1978, unless otherwise noted.

### Subpart A—General Provisions

#### § 110.1 Purpose and scope.

(a) The regulations in this part prescribe licensing, enforcement, and rulemaking procedures and criteria, under the Atomic Energy Act, for the export of nuclear equipment and material, as set out in §§ 110.8 and 110.9, and the import of nuclear equipment and material, as set out in § 110.9a. This part also gives notice to all persons who knowingly provide to any licensee, applicant, contractor, or subcontractor, components, equipment, materials, or other goods or services, that relate to a licensee's or applicant's activities subject to this part, that they may be individually subject to NRC enforcement action for violation of § 110.7b.

(b) The regulations in this part apply to all persons in the United States except: (1) The Departments of Defense and Energy for activities authorized by sections 54, 64, 82, and 91 of the Atomic Energy Act, except when the Department of Energy seeks an export license under section 111 of the Atomic Energy Act;

(2) Persons who export or import U.S. Munitions List nuclear items, such as uranium depleted in the isotope-235 and incorporated in defense articles. These persons are subject to the controls of the Department of State pursuant to 22 CFR 120-130 "International Traffic in Arms Regulations" (ITAR), under the Arms Export Control Act, as authorized by section 110 of the International Security and Development Cooperation Act of 1980;

(3) Persons who export uranium depleted in the isotope-235 and incorporated in commodities solely to take advantage of high density or pyrophoric characteristics. These persons are subject to the controls of the Department of Commerce under the Export Administration Act, as authorized by section 110 of the International Security and Development Cooperation Act of 1980;

(4) Persons who export nuclear referral list commodities. These persons are subject to the licensing authority of the Department of Commerce pursuant to 15 CFR part 799, such as bulk zirconium, rotor and bellows equipment, maraging steel, nuclear reactor related equipment, including process control systems and simulators; and

(5) Persons who import deuterium, nuclear grade graphite, or nuclear equipment other than production or utilization facilities. A uranium enrichment facility is not a production facility.

(6) Shipments which are only passing through the U.S. (in bond shipments) do not require an NRC import or export license; however, they must comply with the Department of Transportation/ IAEA packaging, and state transportation requirements.

[49 FR 47197, Dec. 3, 1984; 49 FR 49841, Dec. 24, 1984, as amended at 55 FR 34519, Aug. 23, 1990; 56 FR 40692, Aug. 15, 1991; 58 FR 13001, Mar. 9, 1993; 61 FR 35602, July 8, 1996; 63 FR 1900, Jan. 13, 1998; 65 FR 70289, Nov. 22, 2000]

## § 110.2 Definitions.

As used in this part,

*Agreement for cooperation* means any agreement with another nation or group of nations concluded under section 123 of the Atomic Energy Act, as amended.

*Atomic Energy Act* means the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011).

*Byproduct material* means

(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using special nuclear material (as in a reactor); and

(2) The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore (see 10 CFR 20.1003).

*Classified information* means National Security Information classified under Executive Order 12356.

*Commission* means the United States Nuclear Regulatory Commission or its duly authorized representatives.

*Common defense and security* means the common defense and security of the United States.

*Conversion facility* means any facility for the transformation from one uranium chemical species to another, including: conversion of uranium ore concentrates to UO<sub>3</sub>, conversion of UO<sub>3</sub> to UO<sub>2</sub>, conversion of uranium oxides to UF<sub>4</sub> or UF<sub>6</sub>, conversion of UF<sub>4</sub> to UF<sub>6</sub>, conversion of UF<sub>6</sub> to UF<sub>4</sub>, conversion of UF<sub>4</sub> to uranium metal, and conversion of uranium fluorides to UO<sub>2</sub>.

*Depleted uranium* means uranium having a percentage of uranium-235 less than the naturally occurring distribution of U-235 found in natural uranium (less than 0.711 weight percent U-235). It is obtained from spent (used) fuel elements or as byproduct tails or residues from uranium isotope separation.

*Deuterium* means deuterium and any deuterium compound, including heavy water, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5000.

*Disposal* means permanent isolation of radioactive material from the surrounding environment.

*Dual-use* means equipment and materials that may be used in nuclear or non-nuclear applications.